ABSTRACT OF DISCLOSURE

A system and method in accordance with the present invention determines in real-time the portions of a set of characters from a data or character stream which satisfies one or more predetermined regular expressions. A Real-time Deterministic Finite state Automaton (RDFA) ensures that the set of characters is processed at high speeds with relatively small memory requirements. An optimized state machine models the regular expression(s) and state related alphabet lookup and next state tables are generated. Characters from the data stream are processed in parallel using the alphabet lookup and next state tables, to determine whether to transition to a next state or a terminal state, until the regular expression is satisfied or processing is terminated. Additional means may be implemented to determine a next action from satisfaction of the regular expression.